Contents

Volume 27 Number 1, January 1996

1 Phenotypic response of a cohort of *Ostrea chilensis* (Philippi 1845) to differing environmental conditions in three oyster farms in southern Chile *J E Toro*

9 Nutrient dynamics and plankton cycles in artificial ponds used in the production oyster *Ostrea edulis* L. spat *E Rogan and T F Cross*

25 Environmental conditions at sea-cages, and ectoparasites on farmed European sea-bass, *Dicentrarchus labrax* (L.), and gilt-head sea-bream, *Sparus aurata* L., at two farms in Greece *S Papoutsoglou, M J Costello, E Stamou and G Tziha*

35 Genetic effects and growth performance in pure and hybrid strains of rainbow trout, *Oncorhynchus mykiss* (Walbaum) (Order: Salmoniformes, Family: Salmonidae) *B C C Wangila and T A Dick*

43 Nitrogen excretion and absorption efficiencies of white steenbras, *Lithognathus lithognathus* Cuvier (Sparidae), under experimental culture conditions *S A Harris and T Probyn*

57 Gonal development, larval settlement and growth of *Mytilus edulis* L. in a suspended population in Hvalfjödur, south-west Iceland *G G Thorarinsdóttir*

67 Nutritional value of animal by-product meal in practical diets for Nile tilapia *Oreochromis niloticus* (L.) fry *M Rodríguez-Serna, M A Olvera-Novoa and Carmona-Osalde*

75 Book Reviews

Volume 27 Number 2, February 1996

79 Effect of fish species combinations on water chemistry and plankton composition in earthen fish ponds *A Milstein and F Svirsky*

91 Observations on induced breeding of the Amazonian fish tambaqui, *Colossoma macropomum* (Cuvier) using CPE and HCG treatment *S Chellappa, M S R F Cacho, F A Huntingford and M C M Beveridge*

95 The effect of luteinizing hormone-releasing hormone analogue (LHRHa) on sperm count of *Oreochromis niloticus* (L.) *M A R Garcia-Abiado, J G Merculio and G C Mair*

101 Effects of light administration and algae on first feeding of Atlantic halibut larvae, *Hippoglossus hippoglossus* (L.) *J Gulbrandsen, I Lein and I Holmefjord*

107 Effects of feeding frequency, moist and dry feeds on the growth of *Chrysichthys nigrodigitatus* Lacépède and on pond water quality *S B Ekanem*

113 Ingestion efficiency of *Macrobrachium rosenbergii* (de Man) larvae feeding on *Artemia, Monia micrura* Kurz and their combination *M J Alam, K J Ang and M Begum*

121 Phenotypic and genetic parameters of body composition traits on flesh colour in Atlantic salmon, *Salmo salar* L. *M Rye and B Gjerde*

135 Effects of selenium dietary enhancement on hatchery-reared coho salmon, *Oncorhynchus kisutch* (Walbaum), when compared with wild coho: hepatic enzymes and seawater adaptation evaluated *S P Felton, M L Landolt, R Grace and A Palmisano*

143 Book Reviews

Volume 27 Number 3, March 1996

147 Partial substitution of fishmeal with soybean meal products and derivatives in diets for the gilthead sea bream *Sparus aurata* (L.) *I Nengas, M N Alexis and S J Davies*

157 Effect of varying doses of organic and inorganic fertilizers on plankton production

and fish biomass in brackish water fish ponds *S K Garg and A Bhatnagar*

167 The dietary protein requirements of *Cichlasoma synspilum* Hubbs, 1935 (Pisces: Cichlidae) fry *M A Olvera-Novoa, E Gasca-Leyva and C A Martinez-Palacios*

175 Storage of common carp, *Cyprinus carpio* L., eggs for short durations *S Rothbard, I Rubinshtein and E Gelman*

183 Development of a computerized information retrieval system for Atlantic salmon, *Salmo salar* L., production *F D Menzies, M F McLoughlin, S B Wheatley and E A Goodall*

191 Hormone-induced ovulation and spawning of captive and wild broodfish of the catadromous Australian bass, *Macquaria novemaculeata* (Steindachner), (Percichthyidae) *S C Battaglene and P M Selosse*

205 Domestication effects on fin nipping, survival and growth in hatchery-reared arctic charr, *Salvelinus alpinus* (L.), in competition with wild conspecifics *S I Siikavuopio, B M Baardvik and M Jobling*

213 Book Reviews

Volume 27 Number 4, April 1996

215 The tolerance to salinity, respiratory characteristics and potential for aquaculture of the Central American cichlid, *Cichlasoma synspilum* (Hubbs, 1935) *C A Martinez-Palacios, L G Ross and V H Sanchez Licea*

221 Replacing palm oil for soybean oil in tilapia, *Oreochromis niloticus* (L.), feed *M A Al-Owafeir and I E H Belal*

225 Protocols for the development of indigenous species: polyculture of indigenous species under Malawian smallholder conditions *R E Brummett and K Katambalika*

235 Biochemical and immunological markers for the discrimination of three *Tilapia* species: *T. zillii* Gervais *T. guineensis* Bleeker and *T. dageti* Thys v.d. Audenaerde (Pisces: Cichlidae) from West Africa *O Oberst, E K Abban and W Villwock*

245 Survival, growth, sexual maturation and reproduction of brook charr, *Salvelinus fontinalis* (Mitchill), Arctic charr, *Salvelinus alpinus* L., and their hybrids *S Dumas, J M Blanc, F Vallée, C Audet and J de la Noüe*

255 *Penaeus monodon* (Fabricius) production related to water quality in East Java, Indonesia *A M Hariati, D G R Wiadnya, M W T Tanck, J H Boon and M C J Verdegem*

261 The effect of Manila clam cultivation on an intertidal benthic community: the early cultivation phase *B E Spencer, M J Kaiser and D B Edwards*

277 Pond production of *Penaeus monodon* in relation to stocking density, survival rate and mean weight at harvest in East Java, Indonesia *A M Hariati, D G R Wiadnya, M Sukkel, J H Boon and M J C Verdegem*

283 Market analysis using Multiple Correspondence Analysis: the case of consumer acceptance of African catfish, *Clarias gariepinus* (Burchell, 1822) *J A Young, A P Smith and J F Muir*

Short Communication

293 Retention of visible implant tags in farmed Atlantic salmon, *Salmo salar* L. *J W Treasurer*

297 Book Reviews

Volume 27 Number 5, May 1996

301 The effects of zeolites and other alumino-silicate clays on water quality at various salinities *M R P Briggs and S J Funge-Smith*

313 Prespawning migratory behaviour of wild and farmed Atlantic salmon, *Salmo salar* L., in a north Norwegian river *T G Heggberget, F Økland and O Ugedal*

323 Microbial origin of the abdominal swelling affecting farmed larvae of gilt-head

seabream, *Sparus aurata* L. *J Sedano, I Zorrilla, M A Moriñigo, M C Balebona, A Vidaurreta, M A Bordas and J J Borrego*

335 Individual variation in progeny size and quality in rainbow trout, *Oncorhynchus mykiss* (Walbaum) *L Th Kristjánsson and L A Vøllestad*

345 The potential use of *Gracilaria* sp. meal in diets for juvenile *Penaeus monodon* Fabricius *M R P Briggs and S J Funge-Smith*

355 Enhancement of bivalve production capacity in a landlocked heliothermic marine basin *Ø Strand*

375 Occurrence and distribution of potentially pathogenic Enterobacteriaceae in carps and pond water in Tamil Nadu, India *R Sivakami, G Premkishore and M R Chandran*

379 Studies of feeding stimulation in young eels, *Anguilla anguilla* L., before and after first-feeding using a novel rapid-screening method *B Knights*

387 Book Review

Volume 27 Number 6, June 1996

389 Editorial

391 Temperature and dietary factors affecting the nitrogen efflux rates of the African catfish, *Clarias gariepinus* (Burchell) *L G Buttle, R F Uglow and I G Cowx*

399 Analysis on individual growth of juvenile carpet shell clams, *Tapes decussatus* (L.), in three different rearing conditions employed in the Ebro's Delta, Spain *M Puigcerver*

405 Vitamin C status and physiological response of the gilthead seabream, *Sparus aurata* L., to stressors associated with aquaculture *M M F Henrique, P C Morris and S J Davies*

413 The development of growth and feeding equations for sea bream, *Sparus aurata* L., culture *D Petridis and I Rogdakis*

421 Swelling of wolffish, *Anarhichas lupus* L., eggs and prevention of their adhesiveness *D A Pavlov and E Moksness*

429 Comparative effects of dietary Na^+-lactate on Arctic char, *Salvelinus alpinus* L., and Atlantic salmon, *Salmo salar* L. *G Gislason, R E Olsen and E Ringø*

437 The leucogram as an indicator of marine-cultured rainbow trout, *Oncorhynchus mykiss* (Walbaum), health in The Netherlands *I L J A Peutz, R W A Oorschot, G R Johnson, B S Horney and J H Boon*

447 The effect of stocking different ratios of common carp, *Cyprinus carpio* L., and tilapias in polyculture ponds on production characteristics and profitability *I Karplus, A Milstein, S Cohen and S Harpaz*

455 The effects of water temperature on food intake, growth and body composition of *Cichlasoma urophthalmus* (Günther) juveniles *C A Martinez-Palacios, Ma Cristina Chavez-Sanchez and L G Ross*

463 Simulation of food and oxygen limitations on the growth of Nile tilapia, *Oreochromis niloticus* L., in fishponds *A A van Dam, E A Huisman and R Rabbinge*

Volume 27 Number 7, July 1996

479 Changes in demand feeding behaviour in Arctic charr, *Salvelinus alpinus* L., caused by differences in dietary energy content and reward level *A Alanärä and A Kiessling*

487 Comparison of amino acid profiles of feeds and fish as a quick method for selection of feed ingredients: a case study for *Colossoma macropomum* (Cuvier) *M B van der Meer and M C J Verdegem*

497 Determining coastal inlet flushing times: a practical expression for use in aquaculture and pollution management *P G Strutton, J A T Bye and*

J G Mitchell

505 Effects of fertilization and incubation factors on the quality and yield of scallop, *Pecten fumatus* Reeve, larvae *M P Heasman, W A O'Connor and A W Frazer*

515 Evaluation of the production potential of *Macrobrachium rosenbergii* (de Man) in monoculture and in polyculture with Nile tilapia and common carp in Saudi Arabia *A Q Siddiqui, H M Al Hinty and S A Ali*

523 Effect of feeding different grain sources on the growth performance and body composition of tilapia, *Oreochromis niloticus* (L.) *S M Al-Ogaily, N A Al-Asgah and A Ali*

531 Feeding consumption, growth and protein utilization of *Colossoma macropomum* (Cuvier) at different dietary fish meal/soya meal ratios *M B van der Meer, E A Huisman and M C J Verdegem*

539 The dynamics of gonad growth and ascorbate status in yellow perch, *Perca flavescens* (Mitchill) *K Dabrowski and A Ciereszko*

543 Diet formulation for *Macrobrachium rosenbergii* (de Man) broodstock based on essential amino acid profile of its eggs *N N Das, C R Saad, K J Ang, A T Law and S A Harmin*

557 The profitability of producing channel catfish *Ictalurus punctatus* (Rafinesque) in cages at a commercial scale on small farms *S Sureshwaran, W R English and E Walters*

564 Erratum

Volume 27 Number 8, August 1996

565 Organ responses to ^{14}C-glucose injection in Atlantic Halibut, *Hippoglossus hippoglossus* (L.), acclimated to diet of varying carbohydrate content *M P Garcia-Riera and G-I Hemre*

573 The breeding potential and biochemical composition of triploid Manila clams, *Tapes philippinarum* Adams and Reeve *S D Utting, P F Millican and I Laing*

581 Effects of sex ratio and feed quality on mass production of Nile tilapia, *Oreochromis niloticus* (L.), fry *M E Salama*

587 Studies on the artificial propagation of *Monopterus albus* (Zuiew) *R Z Guan, L H Zhou, G H Cui and X H Feng*

597 Multiple haemoglobins in three tilapiine species of the genus *Oreochromis* and in eight strains of *O. niloticus* (L.) *J M Macaranas, L Q Agustin and A E Eknath*

603 The response of thick-lipped grey mullet, *Chelon labrosus* (Risso), to diets of varied protein-to-energy ratio *H Ojaveer, P C Morris, S J Davies and P Russell*

613 The influence of algal concentration and body size on filtration and ingestion rates of the clam *Tapes decussatus* (L.) (Mollusca: Bivalvia) *A M Khalil*

623 Effects of different dietary lipids on growth and tissue fatty acid changes in fry of the carp *Catla catla* (Hamilton) *P K Mukhopadhyay and S K Rout*

Management and Ecological Note

631 A simple batch mark for fish studies using injected elastomer *R I G Morgan and D S Paveley*

Short Communication

635 Occurrence of urinary calculi in the early larvae of brown-marbled grouper, *Epinephelus fuscoguttatus* F. *B Sivaloganathan, J Walford, G L Loy and T J Lam*

641 Erratum

Volume 27 Number 9, September 1996

643 Genetic differences between successive year classes of two strains of reared rainbow

trout, *Oncorhynchus mykiss* (Walbaum) *A Butler and T F Cross*

651 Fatty acid profiles of two freshwater fish larvae (gudgeon and perch) reared with *Brachionus calyciflorus* Pallas (rotifer) and/or dry diet *A Awaïss, P Kestemont and J C Micha*

659 Semen cryopreservation of salmonid fishes: influence of handling parameters on the postthaw fertilization rate *F Lahnsteiner, R A Patzner and T Weismann*

673 Growth response of indigenous and exotic carp species to different protein sources in pelleted feeds *M K Alam, O E Maughan and W J Matter*

681 Effects of pond depth and water temperature on the growth, mortality and body composition of Nile tilapia, *Oreochromis niloticus* (L.) *A-F M El-Sayed, A El-Ghobashy and M Al-Amoudi*

689 Studies of triploid oysters in Australia: Evaluation of cytochalasin B and 6-dimethylaminopurine for triploidy induction in Sydney rock oysters *Saccostrea commerciais* (Iredale and Roughley) *J A Nell, R E Hand, L G Goard, S P McAdam and G B Maguire*

699 Water quality and waste production in a recirculating trout-culture system with feeding of a higher-energy or a lower-energy diet *J M Heinen, J A Hankins and P R Adler*

711 Growth and survival response of the Catarina scallop *Argopecten circularis* (Sowerby) to stocking density and length of culture period *A Hernandez-Llamas and V Manuel Gomez-Muñoz*

721 Book reviews

Volume 27 Number 10, October 1996

725 The regulation of fish medicines—UK and European Union aspects *K N Woodward*

735 Influence of sea ranching on hatchery-reared anadromous Arctic charr, *Salvelinus alpinus* (L.) *P S Brunsvik, B Finstad and N J Nilssen*

745 Effect of effluent from a shrimp pond on shoot biomas of mangrove seedlings *N Rajendra and K Kathiresan*

749 Influence of fouling on the growth and survival of the tropical scallop, *Euvola (Pecten) ziczac* (L. 1758) in suspended culture *C J M Lodeiros and J H Himmelman*

757 On the efficacy and mode of action of 2-phenoxyethanol as an anaesthetic for goldfish, *Carassius auratus* (L.), at different temperatures and concentrations *O Weyl, H Kaiser and T Hecht*

765 Growth, food conversion, maintenance and long-term survival of gilthead sea bream, *Sparus auratus* L., juveniles after abrupt transfer to low salinity *S D Klaoudatos and A J Conides*

775 Export performance of major cultured shrimp producers in the Japanese and US markets *B H Ling, P S Leung and Y C Shang*

787 Genetic differences in some haematological traits of communally reared clonal ayu, *Plecoglossus altivelis* Temminck & Schlegel, under stressed and non-stressed conditions *G del Valle, N Taniguchi and A Tsujimura*

795 Oxidative nutritional stress associated with feeding rancid oils to African catfish, *Clarias gariepinus* (Burchell) and the protective role of α-tocopherol *R T M Baker and S J Davies*

Volume 27 Number 11, November 1996

805 Testicular structure, spermatogenesis and sperm cryopreservation in the African clariid catfish *Heterobranchus longifilus* (Valenciennes, 1840) *Z J Otémé, J Nunez Rodriguez, C K Kouassi, S Hem and J-F Agnese*

815 Growth and sexual maturation of six stocks of brown trout *Salmo trutta* L. in culture *I Näslund and J Henricson*

823 The effect of varying dietary protein level on the growth, food conversion, protein utilization and body composition of tropical catfish *Mystus nemurus* (C. & V.) cultured in static pond water system *M S Khan, K J Ang and M A Ambak*

831 Food consumption, growth and respiration of sole, *Solea solea* (L.), during early ontogeny in a hatchery environment *O J Day, D A Jones and B R Howell*

841 Effects of diets on growth and reproductive development of juvenile pikeperch, *Stizostedion lucioperca* (L.), reared under intensive culture conditions *Z Zakes and K Demska-Zakes*

847 Induced spawning in perch, *Perca fluviatilis* L. using carp pituitary extract and HCG *D Kucharczyk, R Kujawa, A Mamcarz, A Skrzypczak and E Wyszomirska*

853 Characteristics and pathogenicity of a *Vibrio câmpbellii*-like bacterium affecting hatchery-reared *Penaeus indicus* (Milne Edwards, 1837) larvae *A S Sahul Hameed, P V Rao, J J Farmer, F W Hickman-Brenner and G R Fanning*

865 Management by life cycle of wolffish, *Anarhichas lupus* L., a new species for cold water aquaculture: a technical paper *E Moksness and D A Pavlov*

885 Muscle cellularity in relation to somatic growth in the European sea bass *Dicentrarchus labrax* (L.) *C Nathanailides, O Lopez-Albors, E Abellan, J M Vazquez, D D Tyler, A Rowlerson and N C Stickland*

Short Communication

891 Application of Hills' procedure for growth curve analysis of a freshwater major carp of India, *Catla catla* (Ham), during their early developmental period *T K Basu and B Bhattacharyya*

Volume 27 Number 12, Debember 1996

895 Extracellular-enzyme activity in trout-farm effluents and a recipient river *S E Brown and R Goulder*

903 The acute toxicity and sublethal effects of nitrite on growth and feed utilization of European eel, *Anguilla anguilla* (L.) *A Kamstra, J A Span and J H van Weerd*

913 Benthic community changes associated with intertidal oyster cultivation *M M Nugues, M J Kaiser, B E Spencer and D B Edwards*

925 Oxygen consumption and ammonia excretion of common wolffish *Anarhichas lupus* Linnaeus 1758 in an experimental-scale, seawater, land-based culture system *A Steinarsson and E Moksness*

931 Manipulation of stocking ratios between surface- and bottom-grazing fishes as a strategy to increase the fertilizer value of rockphosphate in a carp polyculture system *S N Sahu and B B Jana*

937 Ammonia excretion rates from post-smolt Atlantic salmon, *Salma Salar* L., in land-based farms *O I Forsberg*

945 The diet of hybrid red tilapia *Oreochromis niloticus* (L.) × *Oreochromis mossambicus* (Peters) reared in the freshwater ponds of north-eastern Brazil *S Chellappa, N T Chellappa, E A Silva, F A Huntingford and M C M Beveridge*

Short Communication

953 Feeding stimulants in semipurified diets for juvenile lake sturgeon, *Acipenser fulvescens* Rafinesque *R Moreau and K Dabrowski*

959 Index